

Chapter 1:

Introduction, Purpose of Nutrient Analysis, and Learning Outcomes

Introduction

With the publication of the Final Rule for USDA's ***School Meals Initiative for Healthy Children*** (SMI) on June 13, 1995, all schools became responsible for planning menus which meet specific minimum standards for key nutrients and calories by the beginning of SY '96-97. State agencies (SAs) were given the authority to grant waivers to SFAs to postpone implementation of the nutrition standards until no later than SY '98-99.

The SMI Rule, along with action by Congress, provides for four menu planning systems. Additionally, when guidelines are published by USDA, schools may request approval of additional menu planning systems which will achieve the nutrition goals of SMI.

School Meals Initiative for Healthy Children

Nutrition Goals

USDA School Meals Initiative for Healthy Children

Nutrition Goals

- Recommended Dietary Allowances (RDA)
 - 1/4 RDA for age/grade group for breakfast
 - 1/3 RDA for age/grade group for lunch
- Calorie Goals
 - Appropriate for age/grade group
- Dietary Guidelines for Americans
 - Eat a variety of foods
 - Limit total fat to $\leq 30\%$ of calories
 - Limit saturated fat to $< 10\%$ of calories
 - Choose a diet low in cholesterol
 - Choose a diet with plenty of vegetables, fruits and grain products
 - Use salt and sodium in moderation

The *School Meals Initiative for Healthy Children* (SMI) underscores our national health responsibility to provide healthy school meals that are consistent with the Recommended Dietary Allowances (RDAs), the calorie goals and the Dietary Guidelines for Americans.

Menu Planning Systems and Nutrient Analysis:

The currently approved menu planning systems include two food-based menu planning systems:

- Enhanced Food-Based Menu Planning (the Enhanced Meal Pattern), and
- Traditional Food-Based Menu Planning (the Traditional Meal Pattern);

and two nutrient-based menu planning systems:

- Nutrient Standard Menu Planning (NSMP or NuMenus), and
- Assisted Nutrient Standard Menu Planning (ASNMP or Assisted NuMenus).

Meal pattern and menu item requirements for these menu planning systems are in Appendices A through E, pp. 5-13.

Nutrient-based menu planning requires the use of a computer and USDA-approved nutrient analysis software to plan menus which include the daily required menu items and, when averaged over the week, meet appropriate age/grade-based Nutrient Standards and the Dietary Guidelines. With NSMP (NuMenus), meal planning and analysis will be accomplished at the school or school district level; with ANSMP (Assisted NuMenus), the menus will be developed and analyzed by an entity other than the SFA.

In reviewing compliance with the requirements of SMI for school districts that use nutrient-based menu planning, the SA will assess the nutrient analysis for the last completed school week prior to the review period to determine if nutrient analysis methodology were applied appropriately. Part of the review will consist of a review of menus and production records to determine if they correspond to the analysis and if the menu, as offered, over a school week, meets the Nutrient Standards and the Dietary Guidelines.

The food-based menu planning systems provide age/grade-based meal patterns which require specific foods (components)

in specific quantities. SFAs which use food-based menu planning are not required to perform nutrient analyses but are still required to meet the Nutrient Standards and the Dietary Guidelines. The SA will conduct menu reviews which include performing nutrient analyses of the menus served during the review period to determine compliance with the Nutrient Standards and the Dietary Guidelines.

If a school district which uses food-based menu planning performs a nutrient analysis of planned menus using USDA-approved nutrient analysis software, the State agency may accept the nutrient analysis after determining that the analysis was conducted under the criteria established in the regulations.

Purpose of Nutrient Analysis:

The purpose of nutrient analysis is to **determine and compare the calories and certain nutrients contained in a menu to an appropriate nutrient standard and to monitor levels of certain dietary components.**

Performing an accurate nutrient analysis is critical to nutrient-based menu planning and to the evaluation of food-based menus. This training is designed to provide the learner with the knowledge and skills to perform an accurate nutrient analysis.

Learning Outcomes:

Upon completion of this training program, the participant will be able to:

1. Explain the purpose of nutrient analysis and the nutrition goals of the School Meals Initiative.
2. Select USDA-approved nutrient analysis software which will meet the needs of the SFA/SA.
3. Describe key points for nutrient analysis for schools and factors to consider when selecting food items and quantities from the Child Nutrition (CN) Database.
4. Assemble materials necessary for nutrient analysis.
5. Correctly enter data for food items (ingredients), recipes, menus, and

school/SFA data following nutrient analysis protocols for school nutrition programs.

6. Discuss common data entry errors and how to prevent/identify mistakes.
7. Perform nutrient analyses, evaluate data, and revise menus, if needed.
8. Print appropriate reports.

Appendix A: Enhanced Meal Pattern

Lunch

Minimum Quantities for Enhanced Meal Pattern Lunch					
	Required				Option
	Ages 1-2	Preschool	Grades K-6	Grades 7-12	Grades K-3
Meal Component					
Milk (as a beverage)	6 fl. oz.	6 fl. oz.	8 fl. oz.	8 fl. oz.	8 fl. oz.
Meat or Meat Alternate (quantity of the edible portion as served)					
Lean meat, poultry or fish	1 oz.	1 1/2 oz.	2 oz.	2 oz.	1 1/2 oz.
Cheese	1 oz.	1 1/2 oz.	2 oz.	2 oz.	1 1/2 oz.
Large egg	1/2	3/4	1	1	3/4
Cooked dry beans or peas	1/4 cup	3/8 cup	1/2 cup	1/2 cup	3/8 cup
Peanut butter or other nut or seed butters	2 Tablespoons	3 Tablespoons	4 Tablespoons	4 Tablespoons	3 Tablespoons
Yogurt, plain or flavored, unsweetened or sweetened	4 oz. or 1/2 cup	6 oz. or 3/4 cup	8 oz. or 1 cup	8 oz. or 1 cup	6 oz. or 3/4 cup
The following may be used to meet no more than 50% of the requirement and must be used in combination with any of the above:					
Peanuts, soynuts, tree nuts, or seeds, as listed in program guidance, or an equivalent quantity of any combination of the above meat/meat alternate (1 ounce of nuts/seeds = 1 ounce of cooked lean meat, poultry or fish).	1/2 oz. = 50%	3/4 oz. = 50%	1 oz. = 50%	1 oz. = 50%	3/4 oz. = 50%
Vegetables/Fruits (2 or more servings of vegetables or fruits or both)	1/2 cup	1/2 cup	3/4 cup plus extra 1/2 cup over a week ¹	1 cup	3/4 cup
Grains/Breads Must be enriched or whole grain. A serving is a slice of bread or an equivalent serving of biscuits, rolls, etc., or 1/2 cup of cooked rice, macaroni, noodles, other pasta products or cereal grains.	5 servings per week ¹ Minimum of 1/2 per day	8 servings per week ¹ Minimum of 1 per day	12 servings per week ¹ Minimum of 1 per day ²	15 servings per week ¹ Minimum of 1 per day ²	10 servings per week ¹ Minimum of 1 per day ²

¹ For the purposes of this chart, a week equals five days.

² Up to one grains/breads serving per day may be a dessert.

Appendix B: Traditional Meal Pattern

Lunch

Minimum Quantities for Traditional Meal Pattern Lunch					
	Required				Recommended Quantities
	Group I, Age 1-2, (preschool)	Group II, Age 3-4, (preschool)	Group III, Age 5-8, (K-3)	Group IV, Age 9 and older (4-12)	Group V, 12 years and older (7-12)
<i>Meal Component</i>					
Milk (as a beverage)	6 fl. oz.	6 fl. oz.	8 fl. oz.	8 fl. oz.	8 fl. oz.
Meat or Meat Alternate (quantity of the edible portion as served)					
Lean meat, poultry or fish	1 oz.	1 1/2 oz.	1 1/2 oz.	2 oz.	3 oz.
Cheese	1 oz.	1 1/2 oz.	1 1/2 oz.	2 oz.	3 oz.
Large egg	1/2	3/4	3/4	1	1 1/2
Cooked dry beans or peas	1/4 cup	3/8 cup	3/8 cup	1/2 cup	3/4 cup
Peanut butter or other nut or seed butters	2 Tablespoons	3 Tablespoons	3 Tablespoons	4 Tablespoons	6 Tablespoons
Yogurt, plain or flavored, unsweetened or sweetened	4 oz. or 1/2 cup	6 oz. or 3/4 cup	6 oz. or 3/4 cup	8 oz. or 1 cup	12 oz. or 1 1/2 cups
The following may be used to meet no more than 50% of the requirement and must be used in combination with any of the above:					
Peanuts, soy nuts, tree nuts, or seeds, as listed in program guidance, or an equivalent quantity of any combination of the above meat/meat alternate (1 ounce of nuts/seeds = 1 ounce of cooked lean meat, poultry or fish).	1/2 oz. = 50%	3/4 oz. = 50%	3/4 oz. = 50%	1 oz. = 50%	1 1/2 oz. = 50%
Vegetables/Fruits (2 or more servings of vegetables or fruits or both)	1/2 cup	1/2 cup	1/2 cup	3/4 cup	3/4 cup
Grains/Breads Must be enriched or whole grain. A serving is a slice of bread or an equivalent serving of biscuits, rolls, etc., or 1/2 cup of cooked rice, macaroni, noodles, other pasta products or cereal grains.	5 servings per week ¹ Minimum of 1/2 per day	8 servings per week ¹ Minimum of 1 per day	8 servings per week ¹ Minimum of 1 per day	8 servings per week ¹ Minimum of 1 per day	10 servings per week ¹ Minimum of 1 per day

¹ For the purposes of this chart, a week equals five days.

Appendix C: Enhanced Meal Pattern

Breakfast

Minimum Quantities for Enhanced Meal Pattern Breakfast				
	Required			Option
	Ages 1-2	Preschool	Grades K-12	Grades 7-12
<i>Meal Component</i>				
Milk (Fluid) (As a beverage, on cereal or both)	1/2 cup	3/4 cup	8 fl. oz.	8 fl. oz.
Juice/Fruit/Vegetable Fruit and/or vegetable; or full-strength fruit juice or vegetable juice	1/4 cup	1/2 cup	1/2 cup	1/2 cup
Select <u>one</u> serving from each of the following components or <u>two</u> from one component:				
Grains/Breads One of the following or an equivalent combination: Whole grain or enriched bread Whole grain or enriched biscuit/roll, muffin, etc. Whole grain, enriched or fortified cereal	1/2 slice 1/2 serving 1/4 cup or 1/3 oz.	1/2 slice 1/2 serving 1/3 cup or 1/2 oz.	1 slice 1 serving 3/4 cup or 1 oz.	1 slice 1 serving 3/4 cup or 1 oz. <u>Plus</u> an additional serving of one of the grains/breads above
Meat or Meat Alternates: Meat/poultry or fish Cheese Egg (large) Peanut butter or other nut or seed butters Cooked dry beans and peas Yogurt, plain or flavored, unsweetened or sweetened Nut and/or seeds (as listed in program guidance) ¹	1/2 oz. 1/2 oz. 1/2 1 Tablespoon 2 Tablespoons 2 oz. or 1/4 cup 1/2 oz.	1/2 oz. 1/2 oz. 1/2 1 Tablespoon 2 Tablespoons 2 oz. or 1/4 cup 1/2 oz.	1 oz. 1 oz. 1/2 2 Tablespoon 4 Tablespoons 4 oz. or 1/2 cup 1 oz.	1 oz. 1 oz. 1/2 2 Tablespoon 4 Tablespoons 4 oz. or 1/2 cup 1 oz.

¹ No more than 1 oz. of nuts and/or seeds may be served in any one meal.

Appendix D: Traditional Meal Pattern

Breakfast

Minimum Quantities for Traditional Meal Pattern Breakfast			
	Minimum quantities required for		
	Ages 1-2	Ages 3, 4, and 5	Grades K-12
<i>Meal Component</i>			
Milk (Fluid) (As a beverage, on cereal or both)	4 fl. oz. or 1/2 cup	6 fl. oz. or 3/4 cup	8 fl. oz. or 1 cup
Juice/Fruit/Vegetable Fruit and/or vegetable; or full-strength fruit juice or vegetable juice	1/4 cup	1/2 cup	1/2 cup
Select <u>one</u> serving from each of the following components or <u>two</u> from one component:			
Grains/Breads One of the following or an equivalent combination:			
Whole grain or enriched bread	½ slice	½ slice	1 slice
Whole grain or enriched biscuit/roll, muffin, etc.	1/2 serving	1/2 serving	1 serving
Whole grain, enriched or fortified cereal	1/4 cup or 1/3 oz.	1/3 cup or 1/2 oz.	3/4 cup or 1 oz.
Meat or Meat Alternates:			
Meat/poultry or fish	1/2 oz.	1/2 oz.	1 oz.
Cheese	1/2 oz.	1/2 oz.	1 oz.
Egg (large)	1/2	1/2	1/2
Peanut butter or other nut or seed butters	1 Tablespoon	1 Tablespoon	2 Tablespoon
Cooked dry beans and peas	2 Tablespoons	2 Tablespoons	4 Tablespoons
Yogurt, plain or flavored, unsweetened or sweetened	2 oz. or 1/4 cup	2 oz. or 1/4 cup	4 oz. or 1/2 cup
Nut and/or seeds (as listed in program guidance) ¹	1/2 oz.	1/2 oz.	1 oz.

¹ No more than 1 oz. of nuts and/or seeds may be served in any one meal.

Appendix E: Meal Requirements for NSMP (NuMenus) and ANSMP (Assisted NuMenus): Lunch and Breakfast

	Daily Requirement	Weekly Requirement
Lunch	<p><u>Minimum</u> of three (3) Menu Items:</p> <ul style="list-style-type: none"> • Entree - a combination of foods or a single food item that is served as the main course • Fluid milk - as a beverage • Side dish - any other menu item that is not a condiment or a Food of Minimal Nutritional Value served alone, that is, not served as part of another item 	When averaged over a school week, meals must meet the appropriate age/grade-based Nutrient Standard.
Breakfast	<p><u>Minimum</u> of three (3) Menu Items:</p> <ul style="list-style-type: none"> • Fluid milk - served as a beverage or on cereal or both • 2 side dishes - two other menu items that are not a condiment or a Food of Minimal Nutritional Value served alone, that is, not served as part of another menu item 	When averaged over a school week, meals must meet the appropriate age/grade-based Nutrient Standard.

